

Sata Technology and Business College Mathematics Assignment for Remedial Students

(Only for Natural Science)

INSTRUCTION: For the Following Statements Choose the Best Answer From the Given Alternatives.

1. The solution set of $2x^2 - 6x + 4 \leq 0$ is

- A. $(-\infty, 1) \cup (2, \infty)$ B. $(-\infty, 1] \cup [2, \infty)$ C. $[1, 2]$ D. $(1, 2)$

2. The solution set of $|x + 3| \leq 1$ is

- A. $(-4, -2)$ B. $(-\infty, -2) \cup (-2, \infty)$ C. $[-4, -2]$ D. $[-4, -2)$

3. Which one of the following functions is one to one correspondence?

- A. $f(x) = x + 2$ B. $g(x) = x^2$ C. $h(x) = 2x^2 + 4$ D. none

4. The inverse of the relation $R = \{(x, y): y = \frac{1}{3}x - 2\}$ is

- A. $R^{-1} = \{(x, y): y = 3x + 2\}$ C. $R^{-1} = \{(x, y): y = 3x + 6\}$
B. $R^{-1} = \{(x, y): x = \frac{1}{3}y + 2\}$ D. $R^{-1} = \{(x, y): y = 3x - 6\}$

5. Which one of the following algebraic expression is polynomial?

- A. $(x + \frac{1}{2})^2$ B. 3 C. $|x^2|$ D. All

6. What is the quotient when the function $f(x) = 2x^3 + 9x^2 - 3x - 1$ is divided by

$$g(x) = 2x - 1?$$

- A. $x^2 + x + 1$ B. $x^2 + 5x + 1$ C. $2x^2 + \frac{11}{2}x + \frac{5}{4}$ D. $x^2 - 5x - 1$

7. The simplified form of $\frac{2 + \frac{y}{y-2}}{\frac{2y}{y-2}}$ is:

- A. $\frac{y-4}{y}$ B. $\frac{3y-4}{2y}$ C. $y-1$ D. None

8. Which one of the following is not true about the function $f(x) = 3^x$?

- A. The function is decreasing C. $f(x) > 0$, for all $x \in R$
B. The graph crosses y axis at (0, 1) D. $0 < f(x) < 1$ iff $x < 0$

9. If $\log^{2.5} = 0.3979$ and $\log^{4.9} = 0.6902$. Then $\log^{625 \times 7^2} =$ _____

- A. 4.486 B. 1.486 C. 5.4860 D. 5.0881

10. If $\sin\beta = 0.4$, then $\sin(\beta - \pi)$ is equal to :

A. -0.4

B. 0.4

C. -1

D. 0

11. Let $\lim_{x \rightarrow a} f(x) = 2$ and $\lim_{x \rightarrow a} g(x) = 3$ then the value of $\lim_{x \rightarrow a} \frac{2f(x)}{f(x) + g(x)}$ is equal to:

A. $\frac{4}{3}$

B. $\frac{5}{4}$

C. $\frac{4}{5}$

D. $\frac{3}{4}$

12. Let $f(x) = 2x + 7$ then the value of $\lim_{x \rightarrow 3} \frac{f(x) - f(3)}{x - 3}$ is equal to

A. -2

B. -4

C. 4

D. 2

13. The value of $f(3)$ so that the function $f(x) = \frac{x^2 - 9}{x - 3}$ is **continuous** at each point on its domain is:

A. 3

B. 6

C. 9

D. 12

14. If $f(x) = \begin{cases} 1+x & \text{for } x > 0 \\ x & \text{for } x \leq 0 \end{cases}$, then $\lim_{x \rightarrow 0^-} f(x)$ is

A. 1

B. 0

C. $\frac{1}{2}$

D. does not exist

15. The derivative of a function $f(x) = e^{2x-1}$ is

A. $2f(x)$

B. $f(x)$

C. $-2f(x)$

D. $-f(x)$

E. None

16. What is the equation of a circle whose diameter has end points (-1,-3) and (3,3)?

A. $(x-1)^2 + y^2 = \sqrt{13}$

B. $(x-1)^2 + (y-3)^2 = \sqrt{13}$

C. $(x-1)^2 + y^2 = 13$

D. $(x-1)^2 + (y-3)^2 = 13$

17. In the figure, if $\ell_1 \parallel \ell_2$ and $m(\angle AEB) = 50^\circ$ and $m(\text{arc DE}) = 140^\circ$, then $m(\text{arc BC})$ is:

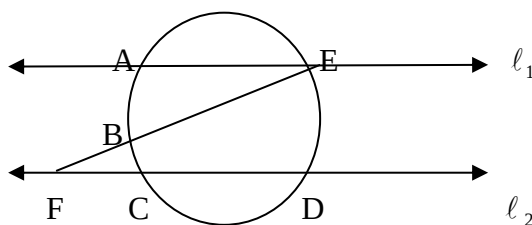
A. 40°

B. 50°

C. 100°

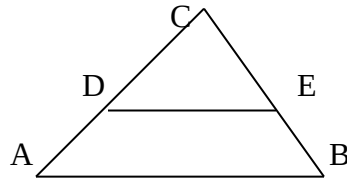
D. 25°

E. None



18. In the figure $\overline{AB} \parallel \overline{DE}$, $\overline{DE}=3\text{cm}$, $\overline{DC}=2\text{cm}$, $\overline{BE}=4\text{cm}$ and $\overline{AB}=6\text{cm}$, then the value of $\overline{AD}$ & $\overline{CE}$ respectively are:

- A. 2cm & 4cm B. 3cm & 4cm C. 3cm & 6cm D. 2cm & 3c
E. None



19. The sum of the measures of the interior angle of 12-sided polygon is:

- A. 1440° B. 1800° C. 1260° D. 1080° E. None

20. Four of the angles of a pentagon are 120° , 80° , 90° and 100° respectively, then the fifth angle is:

- A. 150° B. 120° C. 180° D. 160° E. None